(RA) 28/14, and an average crew can achieve it in less than 20 hours. Two-hour sessions are optimal. If crews can certify RA 28/14 one to two weeks before a gunnery, crew drill and coordination will still be sharp. Training should peak so that sustainment exercises are conducted for no more than two weeks before gunnery.

Driver Certification. Certification is continual and should be complete at least 30 days before a gunnery. Three additional driver tasks should be integrated into crew coordination—achieving a stable firing platform, counting rounds, and identifying targets. Drivers need to be present for all gunnery training.

Classroom Instruction. Classes given by company and platoon master gunners are useful, particularly classes on engagement, scanning, and lead techniques. It is also important to cover scoring procedures and range strategy; for example, on which engagements to save rounds, such as the area troops. Additionally, a written examination on the classroom instruction should be administered. Crews should be tested until they receive a passing score. All crews should know the task, condition, and standard of each engagement.

The Bradley Crew Proficiency Course (BCPC). The BCPC is an opportunity to tie everything together and identify shortcomings not evident in the COFT or the classroom. Fire commands should be closely evaluated and crew cuts strictly enforced. There is no substitute for climbing in a Bradley and executing a gunnery table, even if it's only a dry fire. Communication deficiencies should also be identified and corrected at this time. Three or four BCPCs should be run, beginning two to three months before a gunnery. Getting the crews in the turret helps get them range smart.

Incentives. Incentives for good performance are critical to success. For example, the first crew to achieve RA 28/14 gets a three-day pass, and distinguished crews get Army Achievement Medals or certificates.

Other tips:

• Physically zero the 25mm gun and the coaxial machinegun using the day, night, and auxiliary sights.

• All crew checks must be hands-on verification. (Say it, see it, touch it.)

• Have the gunner describe the engagement to the BC before executing it.

• Use misfire procedures during concurrent training.

• During the day phase, ensure that thermals are cooled down and ready.

• Keep a rag handy for wiping the dust and grime off the optics.

• Strive for a 1-3-4 or 1-4-3 round burst, even when simulating during BCPC.

• Try to kill the target in five rounds (25mm) in the defense, 1-4 burst, and conserve ammunition.

• Crews should get a communications check with the spotter/tower and must clearly hear both.

• Remember when scanning to position the horizon line to show two-thirds ground and one-third sky.

• Use the sensing round as it is intended, and adjust from it.

• Use target forms when adjusting the gunner on target.

• Have everyone zero on center of mass without exception.

• Post a diagram for coaxial machinegun zero adjustment on the coax door.

Some crew personnel turbulence is inevitable, but commanders can reduce the effects of crew turbulence through a standardized gunnery program. Given the best equipment and sound training, our soldiers can achieve excellence in gunnery time after time.

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A SIMNET Training Program

CAPTAIN JONATHAN D. THOMPSON

As training budgets shrink, commanders are having to find innovative ways to train their units to combat readiness. They must train smarter and use all of the available resources.

One such resource is simulators, which allow units to train without the expense of fuel, spare parts, and ammunition. Tank and Bradley crews have long used unit conduct-of-fire trainers (UCOFTs) to train crews for gunnery. The Army has these simulators available to use in training collective tasks. One key device for platoons, companies, and battalions is the Simulation Network, or SIMNET.

As a Bradley company commander in the 3d Infantry Division, I always

looked forward to using the SIMNET. As with any complex equipment, however, we had to develop a training program for the crews to become proficient before we did any tactical training. We developed a program that accelerated the results from our use of the SIMNET.

A SIMNET site consists of several vehicle simulators hooked together into a single computer system. Our home-station facility in Germany contained 14 Bradley fighting vehicle (BFV) simulators and 14 Abrams tank simulators, which allowed a Bradley company and a tank company to train at the same time.

The simulators replicate actual vehicles, and crews must perform many of the same tasks in operating them as they would the actual vehicles. As crew members look through the vision blocks, they see a computer-generated landscape that corresponds to their map. They can see other vehicles on the ground and can even roll their own vehicle if they try to negotiate a slope that is too steep.

Each SIMNET facility has a stealth station and control monitor, through which someone can monitor everything on the simulated battlefield. The stealth mode enables this person to link up with any one of the vehicles and follow its progress. Another monitor shows icons that represent friendly and enemy vehicles and their locations on the map. It also shows when each vehicle fires and identifies the target.

SIMNET site managers can create semi-automated forces (SAFs) representing other vehicles, which can be either friendly or enemy. The controller can adjust the SAFs' accuracy of fire and probability of hit. The controller also gives them their attack orders on another computer screen. Threat SAFs may include T-72 tanks, BMPs, artillery, attack helicopters, and attack planes.

The SIMNET has other target devices called "paper targets," which are vehicles that appear on the ground when the controller turns them on, much like stationary targets on a gunnery range. With these, we could develop scenarios similar to the target

scenarios platoons would face during Bradley Table XII, Platoon Qualification.

My coordination for training in the SIMNET began when the S-3 allocated the company time in the facility. Because of the complexity of the simulators, I always tried to get at least two consecutive days, preferably three. After receiving my allocation, I would talk to the site manager and discuss my concept of the training. I would go back to the manager no later than 72 hours before the training and give him an overlay and starting locations for all vehicles.

The first goal was always to train crews and platoons on land navigation. If they did not have this critical skill before we began a tactical exercise, we would waste time chasing vehicles

The first goal was always to train crews and platoons on land navigation. If they did not have this critical skill before we began a tactical exercise, we would waste time chasing vehicles around the screen.

around the screen. Thus, the company developed platoon land navigation courses. Each platoon received a route with several legs that covered different types of terrain. Initially, the route went through easily identifiable terrain so the crews could get used to reading the SIMNET map. The controller placed friendly and enemy vehicles along the route so the platoon would have to practice spot reports and battle drills.

As the platoons ran the courses, either my executive officer (XO) or I would monitor the stealth station, which allowed us to stop a platoon or vehicle that was lost. If the crews had recently been in the SIMNET, it usually took three to four hours for them to become proficient enough in navigating.

Our next step depended on the

chosen training focus. If we were preparing for gunnery, the platoons would execute a Bradley Table XII scenario. We used the paper targets in arrays similar to those the crews might see on the qualification range. Again, either the XO or I would monitor a platoon's progress at the stealth station. We listened to the platoon net, heard the platoon leader's fire commands, and watched the fire patterns. When the platoon was finished, we conducted an after-action review (AAR) and, if time allowed, did another run. Usually, three to four hours of training permitted each platoon to run the scenario two or three times.

If we were training to go to the Combat Maneuver Training Center (CMTC), or if the training focus was on company or team collective tasks, we would go directly from the land navigation course to company or team missions. Whenever possible, the company's cross-attached tank platoon and the company fire support team joined us for training.

With participation by the battalion S-2, I would give the site manager a threat scenario that we might face at the CMTC. For example, if we were conducting a defense, the scenario might include combat reconnaissance patrols, forward security elements, and an advance guard main body.

The site manager would position each platoon in an assembly area as depicted on the overlay. We would then move out along designated routes according to my operations order. During company missions, the XO would monitor the stealth station while I was in a simulator, which permitted me to command and control in conditions similar to those at the CMTC.

Again, it took three to four hours to conduct two iterations of a company mission, with an AAR after each run. Since a CMTC rotation usually included a defense, an attack, and a movement to contact, it took at least two days for the company to get through each mission.

We also trained as a battalion task force, as this was one of the few places that permitted the key parts of the bat-

talion to work together. To support this training, the main command post (CP), the combat trains CP, the mortar platoon fire direction centers, and the field trains CP would set up and tie into the SIMNET site with wire and radio. Since our facility did not have enough simulators for every crew, we would only go down to platoon leader level. Then the site manager would attach SAF vehicles to fill out the company ranks.

The SIMNET could train more than just maneuver forces. I often started vehicles out with less than 100 percent of fuel or ammunition and then practiced a refuel/resupply-on-the-move site. The facility also had a fire support station, a close air support station, an engineer station, and a combat service support station. We put the company fire support officer in a simulator and had

him direct fire support while one of his forward observers ran the fire support station.

To make the SIMNET more realistic, I always started with an operations order and then a sand table rehearsal. This allowed me to exercise my troop-leading procedures.

The SIMNET did have limitations:

• It could not replace actual field training, maneuvering, and shooting. Indeed, there is no substitution for these.

• It could not fully exercise the dismounted infantry. The facility's one dismount station represented only one infantry squad.

• Vehicles could not dig in. We had to position them in tree lines or on reverse slopes, exposing a vehicle as it moved to fire.

Despite these limitations, I found the SIMNET an excellent training device. With a well-thought-out program, good coordination, and a clear idea of what the SIMNET could do for us, we used it effectively. The key benefit was better command and control. The platoons improved fire control and distribution and battle drill execution. In turn, the company's crews and platoons were much better when they actually deployed to the field.

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Getting More Out of the Bradley
Platoon Gunnery Trainer

CAPTAIN CRAIG A. COLLIER

The Bradley platoon gunnery trainer (PGT) consists of four conduct-of-fire trainer (COFT) systems linked together with two image generators and a platoon communication system. The Bradley PGT, designed to train platoon gunnery with an emphasis on fire control and distribution, is currently available only in Europe, where I encountered it in the 1st Armored Division.

The PGT combines the precision gunnery training of the COFT with the exercise playback, after-action review (AAR) capability, and computer graphics of the simulations network (SIMNET). Unlike SIMNET, however, in the PGT the enemy cannot fire back, and the exercise playback, though useful, is limited to a VCR tape of color-coded Bradley fighting vehicle (BFV) icons along with the platoon's recorded conversation.

Like the COFT, the PGT provides a variety of offensive and defensive exercises in several types of terrain and visibility conditions. The PGT in the division had added a desert database, improved graphics, and the ability to separate into four COFTs, complete with the COFT matrix.

The best part of the PGT, however, is that it enables the trainer to modify existing programs or create completely new ones to fit his training needs. When the platoon gunnery trainer arrived in the division, the infantry company commanders quickly realized it was the best and most cost-effective method of teaching platoon fire control and

distribution, short of Bradley Tables (BTs) XI and XII. In fact, the original intent was to use the PGT as a "gate" before a platoon's BT XI.

My goal was to train my platoons on our standard platoon fire control and distribution standing operating procedures (SOPs), using realistic exercises with enemy formations. Our platoon fire control SOP has each BFV responsible for the destruction of a portion of an enemy vehicle formation: The wingmen fire at vehicles from the outside to the inside and from far to near of the formation; the platoon leader and platoon sergeant fire at vehicles from inside to outside and from near to far. This arrangement is easy to control if everyone understands his part and the enemy formation consists of the same